



National Child Care Information Center

A service of the Child Care Bureau

NCCIC

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THE EFFECTS of QUALITY CHILD CARE on YOUNG CHILDREN

The following selected resources examine the long-term effects of high-quality early care and education for child outcomes including cognitive abilities and social and emotional development, and for promotion of factors of long term success such as lower rates of special education services, grade retention, and juvenile arrest, and higher rates of high school completion. This research is grouped into the following categories: [general resources](#); research related to [Early Head Start and Head Start](#); research on the National Institute of Child Health and Human Development (NICHD) studies; research from the [Abecedarian](#) study; research from the [High/Scope Perry Preschool](#) study; research from the [Chicago Child-Parent Center Program](#); and [State-specific](#) resources. Many of these studies targeted low-income children and families, and typically included participants from African American and/or Hispanic/Latino backgrounds.

General Resources

■ “Child Care in Poor Communities: Early Learning Effects of Type, Quality, and Stability” (January/February 2004), in *Child Development* Vol. 75, No. 1, by Susanna Loeb, Bruce Fuller, Sharon Lynn Kagan, and Bidemi Carrol, reports on the observed quality of center and home-based child care settings selected by single mothers soon after they entered welfare reform programs in 1998. It explores how young children’s exposure to center versus home-based care, care quality, and care stability affect early cognitive and social development, net baseline levels of cognitive and social proficiencies, the mother’s own cognitive ability and education level, and several other background factors. It uses a sample of children who were between 12 and 42 months when their mothers entered welfare-to-work programs, and finds positive cognitive effects for children in center care. Children also display stronger cognitive growth when caregivers are more sensitive and responsive, and stronger social development when providers have education beyond high school. Children in family child care homes show more behavioral problems but no cognitive differences. This resource is available on the Web at http://pace.berkeley.edu/Stanford_Child_Dev_Findings.pdf.

■ “Early Childhood Education” (2002), in *School Reform Proposals: The Research Evidence*, by W. Steven Barnett, ed. Alex Molnar, published by Education Policy Research Unit (EPRU), Arizona State University, argues that prekindergarten education for disadvantaged children can greatly increase their cognitive abilities, leading to long-term increases in achievement and school success. In addition, although general cognitive abilities as measured by IQ may only temporarily increase, persistent increases can be produced in the specific abilities measured by standardized achievement tests in reading and math. It notes that programs can also have positive effects on children’s long-term social and emotional development, reducing crime and delinquency. The author suggests that, to reap all of their potential benefits, prekindergarten programs for disadvantaged children should be intensive, high in quality, and emphasize both cognitive and social development. This book chapter is available on the Web at

<http://www.asu.edu/educ/eps1/EPRU/documents/EPRU%202002-101/Chapter%2001-Barnett-Final.pdf>.

■ *America's Child Care Crisis: A Crime Prevention Tragedy* (2000), by Fight Crime: Invest in Kids, found that young people who spend their early years in high-quality child care are half as likely to be arrested later. The report compared the juvenile arrest records of 1,000 18-year-olds, who had been enrolled in those centers as children, with similarly at-risk youths who had received full-day kindergarten, but not the preschool and parent-coaching program provided by the centers. Of those who had only attended kindergarten, 26 percent had had at least one juvenile arrest and 15 percent had had two or more arrests as juveniles. Of those who had attended the preschool program, 16 percent had had at least one arrest and 8 percent had had two or more. The complete report is available on the Web at <http://www.fightcrime.org/reports/childcarereport.pdf>.

■ *Child Care Quality: Does It Matter and Does It Need to be Improved?* (2000), by Deborah Lowe Vandell and Barbara Wolfe, Office of the Assistant Secretary for Planning and Evaluations, U.S. Department of Health and Human Services, evaluates the research on child care quality. It concludes that data indicate that child care quality does matter. Children appear happier and more cognitively engaged in settings in which caregivers are interacting with them in positive ways and in settings in which child to adult ratios are low. Children who attend higher quality child care settings (measured by caregiver behaviors, facility conditions, age-appropriate activities, and structural and caregiver characteristics) display better cognitive, language, and social competencies on standardized tests. This resource is available on the Web at <http://www.ssc.wisc.edu/irp/sr/sr78.pdf>.

■ *Eager to Learn: Educating Our Preschoolers* (2000), eds. Barbara T. Bowman, M. Suzanne Donovan, and M. Susan Burns, National Research Council Committee on Early Childhood Pedagogy, published by National Academy Press, addresses the education of children ages 2 to 5. It examines the accumulated theory, research, and evaluation literature relevant to early care and education, and presents the Committee's recommendations. It focuses on programs provided outside the home, such as preschool, Head Start, and child care centers. The report cites research to show that adequate care involves providing quality cognitive stimulation; rich language environments; and the facilitation of social, emotional, and motor development. Likewise, adequate education for young children can occur only in the context of good physical care and of warm affective relationships. The study explores curriculum and pedagogy, assessment, preparation of early childhood teachers and caregivers, and the need for program and practice standards to promote quality in early childhood education. This document is available on the Web at <http://www.nap.edu/books/0309068363/html>.

■ *From Neurons to Neighborhoods: The Science of Early Childhood Development*, (2000), eds. Jack P. Shonkoff and Deborah A. Phillips, by the Committee on Integrating the Science of Early Childhood Development, Board on Children, Youth, and Families, Commission on Behavioral and Social Sciences and Education, National Research Council and Institute of Medicine, describes the review of an extensive multi-disciplinary body of research covering the period from before birth to entry into kindergarten. The review was used to generate an integrated science of early childhood development and to explore the role of early experiences.

This book synthesizes the literature, elaborates on a number of core concepts of development, and offers recommendations for policy and practice. The committee's conclusions and recommendations are grounded in four overarching themes: (1) all children are born wired for feelings and ready to learn; (2) early environments matter and nurturing relationships are essential; (3) society is changing and the needs of young children are not being addressed; and (4) interactions among early childhood science, policy, and practice are problematic and demand dramatic rethinking. This resource is available on the Web at <http://www.nap.edu/books/0309069882/html>.

■ *The Children of the Cost, Quality, and Outcomes Study Go to School* (June 1999), by Ellen Peisner-Feinberg, Margaret Burchinal, Richard Clifford, Noreen Yazejian, Mary L. Culkin, Janice Zelaso, Carollee Howes, Patrica Byler, Sharon Lynn Kagan, and Jean Rustici, published by the National Center for Early Learning and Development (NCEDL) at the University of North Carolina, is based on a longitudinal study that began in 1993. *Cost, Quality, and Child Outcomes in Child Care Centers* (1995), examined the influence of typical center-based child care on children's development during their preschool years. The researchers then followed these children through the end of 2nd grade. *The Children of the Cost, Quality, and Outcomes Study Go to School* summarizes the findings of the research on the relation of child care quality to the developmental outcomes of children from the preschool years through the 2nd grade. The overarching research question guiding their work was, "Do early child care experiences have long-term consequences for children's development?" The findings are reported in two sets. The first set, the longitudinal findings, looked at the influence of early child care experiences on children's development over the time period from the preschool years into the early elementary years. The second set, the 2nd grade findings, looked at the influence of both early child care experiences and later school experiences in kindergarten and 2nd grade on children's abilities in the second grade. Its major finding was that the quality of child care experiences must be improved in order for all of America's children to be ready for school. The Executive Summary of *The Children of the Cost, Quality, and Outcomes Study Go to School* is available on the Web at <http://www.fpg.unc.edu/~ncedl/PDFs/CQO-es.pdf>. The Technical Report is also available on the Web at <http://www.fpg.unc.edu/~NCEDL/PDFs/CQO-tr.pdf>.

■ *Preventing Reading Difficulties in Young Children* (1998), by Catherine E. Snow and M. Susan Burns, published by National Academy Press, is a report of the Committee on the Prevention of Reading Difficulties in Young Children. It suggests that empirical work in the field of reading has advanced sufficiently to allow substantial agreed-upon results and conclusions. This research synthesis provides an integrated picture of how reading develops and how reading instruction should proceed. The focus of the review is prevention. It outlines a picture of the conditions under which reading is most likely to develop easily—conditions that include stimulating preschool environments, excellent reading instruction, and the absence of any of a wide array of risk factors. It provides recommendations for further research. This resource is available on the Web at <http://books.nap.edu/books/030906418X/html/index.html>.

■ *Early Childhood Care and Education: An Investment That Works* (1997), published by the National Conference of State Legislatures (NCSL), discusses the link between long-term positive outcomes for children and their involvement in early childhood education programs such as Head Start, prekindergarten, and child care. Early care and education and the

implications for juvenile justice, schools, and the work force of the 21st century are addressed as well as programs for children and profiles of innovative programs. The report also discusses the role of the States in providing these programs and gives examples of successful State programs. For additional information, contact NCSL at 303-364-7700 or on the Web at <http://www.ncsl.org>.

■ *Are They in Any Real Danger? What Research Does—and Doesn't—Tell Us About Child Care Quality and Children's Well Being* (1996), a report from Mathematica Policy Research, Inc., summarizes and analyzes the research literature on the measured variations in child care quality and outcomes for children in center-based and family child care. This resource is available on the Web <http://www.mathematica-mpr.com/publications/PDFs/realdanger.pdf>.

■ *Child Care for Low Income Families: Summary of Two Workshops* (1995), by Deborah A. Phillips, for the National Research Council, Institute on Medicine, summarizes the activities of two workshops on child care options for low-income families. The workshops focused on factors affecting patterns of child care use among low-income families, child care and children's development, child care and economic self-sufficiency, and the structure and consequences of child care subsidies. It concluded that: (1) low-income families resemble other families in the considerations that guide their child care preferences and choices; (2) there is a relatively low supply of care for infants, school-age, and special needs children; (3) the quality of care available to low-income families is highly uneven; (4) variation in child care quality has discernable and significant effects on children's development; (5) continuity of care is an especially important issue for low-income families; (6) child care subsidies appear to facilitate low-income families' efforts to obtain and maintain paid employment; and (7) Federal funding levels that restrict States' capacity to provide subsidies to all qualified families lead to a series of detrimental consequences. This publication is available on the Web at <http://www.nap.edu/readingroom/books/childcare/>.

■ "Long-Term Outcomes of Early Childhood Programs: Analysis and Recommendations" (Winter 1995), in *The Future of Children*, by Deanna S. Gomby, Mary B. Lerner, Carol S. Stevenson, Eugene M. Lewit, and Richard E. Behrman, published by the Center for the Future of Children, reviews studies of preschool programs, family support programs, and children's experiences in schools, placing them in a broad historical, international, and public policy context. It reviews what is known about the effects of early childhood programs on children and their families and considers how those effects come about and why effectiveness varies across programs. It reviews major policy questions and offers recommendations concerning the steps public and private decision-makers should take to shape early childhood programs and policies. This publication is available on the Web at http://www.futureofchildren.org/usr_doc/vol5no3ART1%2Epdf.

Early Head Start and Head Start

■ "Early Head Start: Further Lessons" (Summer 2004), in *Evaluation Exchange* Vol. X, No. 2, by Catherine Ayoub and Barbara Pan, published by the Harvard Family Research Project, evaluates longitudinal data that examined parenting stress, the language skills of children in Early Head Start, and the factors that influence sample attrition in program evaluation research

in Vermont. This resource is available on the Web at <http://www.gse.harvard.edu/hfrp/eval/issue26/spotlight6.html>.

■ *Head Start: Curriculum Use and Individual Child Assessment in Cognitive and Language Development* (September 2003), by the U.S. General Accounting Office (GAO), formally conveys information provided during briefings on May 15, 2003, and June 6, 2003, to staff of the House Committee on Education and the Workforce, U.S. Congress. It reports on the extent to which Head Start programs have made progress in meeting performance standards for cognitive and language development; changed their use of curricula since the performance standards for children's cognitive and language development were issued; and used teacher mentoring and individual child assessments to support curriculum planning. The report GAO-03-104 is available on the Web at <http://www.gov.new.items/d031049.pdf>.

■ *Head Start FACES 2000: A Whole-Child Perspective on Program Performance* (May 2003), by Nicholas Zill, Gary Resnick, Kwang Kim, Kevin O'Donnell, Alberto Sorongon, Ruth Hubbell McKey, Shefali Pai-Samant, and Cheryl Clark, for Child Outcomes Research and Evaluation; Office of Planning, Research and Evaluation; Administration for Children and Families; U.S. Department of Health and Human Services, uses data from the Head Start Family and Child Experiences Survey (FACES) research to provide an in-depth examination of Head Start children's cognitive and social-emotional development; Head Start programs' use of curricula; quality in Head Start classrooms; relationship of program and classroom characteristics to children's outcomes; relationship of family and parental characteristics to children's outcomes; and predictive validity of the FACES cognitive and behavioral measures. This resource is available on the Web at http://www.acf.dhhs.gov/programs/core/ongoing_research/faces/faces00_4thprogress/faces00_4thprogress.pdf.

■ *Head Start Improves Achievement and Reduces Crime* (April 2003), by Fight Crime: Invest in Kids, is a research brief that discusses how quality prekindergarten and child care programs, including Head Start, have produced positive, long-term effects on the lives of children from disadvantaged families. Outcomes include higher educational attainment, lower crime rates, and success in promoting social/emotional and behavioral development. The authors suggest key improvements that could make Head Start even better. This resource is available on the Web at <http://www.fightcrime.org/reports/HeadStartBrief.pdf>.

■ *Relationship of Program and Classroom Characteristics to Children's Cognitive Gains and Social Development in Head Start* (April 2003), by Nicholas Zill, for the Child Outcomes Research & Evaluation, Division of Child and Family Development, Office of Planning, Research & Evaluation, U.S. Department of Health and Human Services, is a conference presentation that examines variations in children's cognitive and social-emotional development and their relationships to program and class characteristics that are believed to be associated with enhanced cognitive growth or emotional maturation. The study is a comparison of the 2000 cohort of FACES to the 1997 cohort. The study found gains by children in vocabulary and early writing and increased learning of letter recognition. The study also found significant gains in children's cooperative behavior and declines in problem behavior. This resource is available on the Web at

http://www.acf.hhs.gov/programs/core/ongoing_research/faces/srcd2003/nick2003_quality_outcomes_final.pdf.

■ *Understanding Quality in Head Start Classrooms: The Role of Teacher and Program-Level Factors* (April 2003), by Gary Resnick and Nicholas Zill, for the Head Start Bureau, Administration for Children and Families, U.S. Department of Health and Human Services, is a conference presentation that uses data from the Head Start Family and Child Experiences Survey (FACES) to address the quality of Head Start classrooms in 2000-2001 compared to quality reported in 1997-1998; changes from 1997-1998 to 2000-2001 in the backgrounds, qualifications and experiences of Head Start teachers; the relationship between the quality of Head Start classrooms and teacher qualifications, experience and attitudes, and knowledge; which factors seem most important in explaining variations in quality; and factors beyond the classroom that might explain variations in the quality of Head Start classrooms, such as the types of curricula Head, the average teacher salaries, and characteristics of families served by the Head Start program. This resource is available on the Web at

http://www.acf.hhs.gov/programs/core/ongoing_research/faces/srcd2003/gary2003_srcd_quality_final.pdf.

■ “The Head Start Family and Child Experiences Survey (FACES): What Are We Learning about Program Quality and Child Development?” (2003), a *Research Update*, in *Children and Families*, by Ruth Hubbell McKey, National Head Start Association, gives updated information about the FACES, a comprehensive study that examines child development, classroom quality, parent perceptions and experiences, and staff characteristics, knowledge, and opinions. The article examines data on families in 1997 and in 2000 to see how children and the program are changing over time. This information is available on the Web at

http://www.acf.hhs.gov/programs/core/ongoing_research/faces/nhsa/nhsa_faces_w03.pdf.

■ *Pathways to Quality and Full Implementation in Early Head Start Programs* (December 2002), by Ellen Eliason Kisker, Diane Paulsell, John M. Love, and Helen Raikes, for the Administration for Children and Families, U.S. Department of Health and Human Services, is a final report of the National Early Head Start Research and Evaluation project. The report describes lessons from the implementation analysis of 17 research programs as they developed between their initial funding in 1995 or 1996 and the final site visits in fall 1999. The report discusses major findings; themes characterizing early stages of program development; accomplishments of the past four years of the program; and important challenges. This resource is available on the Web at

http://www.acf.hhs.gov/programs/core/ongoing_research/ehs/pathways/pathways_title.html.

■ *Early Head Start Benefits Children and Families* (June 2002), by the Administration for Children and Families, U.S. Department of Health and Human Services, examines the benefits of Early Head Start for 3,000 children and families at 17 sites. Half the children received Early Head Start services, while the other half were assigned to a control group that did not receive these services. Children were assessed at 14, 24, and 36 months old. Early Head Start programs produced significant, positive impacts on standardized measures of children’s cognitive and language development. Programs choosing different approaches to serving families achieved different patterns of success. Programs were characterized according to the options they offered

families: center-based, home-based, or mixed. Mixed-approach programs demonstrated the strongest pattern of impacts for the families they served. These programs consistently enhanced children's language development and aspects of social-emotional development. Implementing the Head Start Program Performance Standards early and fully is important for maximizing impacts on children and families. Programs that enroll families during pregnancy, or very early in the child's life, have the greatest chance to effect change. The broad impacts on child development, combined with changes in parents' support for language and literacy, provide a foundation that subsequent programs can build on to continue the Early Head Start gains. This resource is available on the Web at

http://www.acf.dhhs.gov/programs/core/ongoing_research/ehs/dissemination/research_briefs/research_brief_overall.pdf.

■ *Making a Difference in the Lives of Infants and Toddlers and Their Families: The Impacts of Early Head Start* (June 2002), by Child Outcomes Research and Evaluation, Office of Planning, Research and Evaluation and the Head Start Bureau, Administration for Children and Families, U.S. Department of Health and Human Services, is a three-volume technical report that presents findings from a large-scale, random assignment evaluation of 17 Early Head Start programs. The evaluation focuses on the impacts that programs have on children and families served, program approach and implementation, and continuous improvement. Findings from this study suggest that the overall impacts of an Early Head Start program are modest but significant and positive. This report and its Executive Summary are available on the Web at http://www.acf.dhhs.gov/programs/core/ongoing_research/ehs/impacts_execsum/impacts_execsum.pdf.

■ “Extended Childhood Intervention Prepares Children for School and Beyond” (May 9, 2001), in the *Journal of the American Medical Association* Vol. 285, No. 18, by Ed Zigler and Sally J. Styfco, published by the American Medical Association, reviews the principles of the Head Start approach, what has been learned about its effectiveness, and the importance of multi-layered services for preschool children in poverty and their parents. It cautions that, although a year in Head Start or similar programs can ameliorate the impact of poverty, alone it cannot inoculate a child indefinitely against the long-term impacts of poor health and nutrition, low-performing schools, and impoverished neighborhoods. Additional information is available on the Web at <http://jama.ama-assn.org/content/vol285/issue18/index.dtl>.

■ *Early Head Start Research: Building Their Futures: How Head Start Programs Are Enhancing the Lives of Infants and Toddlers in Low-Income Families* (January 2001), by the Commissioner's Office of Research and Evaluation and the Head Start Bureau, Administration for Children and Families, U.S. Department of Health and Human Services, describes the interim impact findings emerging from the analysis of child and family outcomes through the first two years of the children's lives. It presents an analysis of the impacts that the research programs have had on children's development, parenting, and family development through 2 years of age. The Executive Summary is available on the Web at http://www.acf.hhs.gov/programs/core/ongoing_research/ehs/buildingvol_1/bldg_vol1_exec_sum.html. The full report is available on the Web at http://www.acf.hhs.gov/programs/core/ongoing_research/ehs/buildingvol_1/bldg_vol1_toc.html.

■ *Head Start FACES: Longitudinal Findings on Program Performance: Third Progress Report* (January 2001), prepared by Westat, Ellsworth Associates, Inc., Abt Associates, Inc., and The CDM Group, Inc., prepared for the Commissioner's Office of Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services, is one of a series of longitudinal studies that discusses how Head Start narrows the gap between disadvantaged children and all children in vocabulary and writing skills during the Head Start year; improves the social skills of Head Start children; and leads to continued improvements in word knowledge, letter recognition, math, and writing skills for Head Start children relative to other children during the kindergarten year. This resource is available on the Web at http://www.acf.hhs.gov/programs/core/pubs_reports/faces/PMC3rdReport.pdf.

■ *Into Adulthood: A Study of the Effects of Head Start* (August 2000), by Sherri Oden, Lawrence Schweinhart, and David Weikart, with Sue Marcus and Yu Xie, published by High/Scope Press, presents results of a 17-year follow-up study of 622 young adults. The study found evidence of important effects on school success and crime. The study also examined the effects of a Head Start program that used the *High/Scope* educational approach. Children who attended Head Start classes that used this approach rather than the standard Head Start curriculum of the time had a significantly higher grade point average throughout their schooling and experienced fewer than half as many criminal convictions by age 22. A summary is available on the Web at <http://www.highscope.com/research/HeadStartStudy.htm>.

■ *Early Childhood Intervention Programs: What Do We Know?* (April 2000), by Janet Currie, for the Brookings Roundtable on Children, reviewed the literature on early childhood interventions, focusing on center-based programs for children between birth and school entry that emphasize school readiness as a goal. The studies reviewed did not produce consistent evidence of the long-term effectiveness of early intervention; however, the more rigorous studies tended to find larger and more significant long-term effects. The report proposes that the proven shorter and medium-term benefits of Head Start already pay back much of the cost of the program. This resource is available on the Web at <http://www.brook.edu/es/research/projects/cr/doc/currie20000401.pdf>.

■ *Evaluation of Head Start Family Child Care Demonstration: Final Report* (February 2000), by the RMC Research Corporation, prepared for the Commissioner's Office of Research and Evaluation and the Head Start Bureau, Administration for Children and Families, U.S. Department of Health and Human Services, describes the results of evaluations of family child care demonstration grants which were given to 18 Head Start agencies to establish and implement family child care home programs for providing Head Start services. After an initial planning and start-up year, two cohorts of children (1993 and 1994) were randomly assigned to either family child care homes or center classrooms. The evaluation team measured program quality and adherence to Head Start Performance Standards in the two settings and conducted assessments of the children's cognitive, social-emotional, and physical development at the beginning and end of the Head Start year and in the middle of the kindergarten year. In addition, parent perspectives on the program and overall program satisfaction were probed. This resource is available on the Web at http://www.acf.hhs.gov/programs/core/pubs_reports/hseval/hseval_toc.html.

■ *What Children Know and Can Do At the End of Head Start and What It Tells Us About The Program's Performance* (1999), by Nicholas Zill, Gary Resnick, and Ruth Hubbell McKey, produced by Head Start Family and Child Experiences Survey (FACES), is one of a series of papers using data from FACES, a national longitudinal study, to describe the cognitive, social, emotional, and physical development of Head Start children; the characteristics, well-being, and accomplishments of families; the observed quality of Head Start classrooms; and the characteristics, needs, and opinions of Head Start teachers and other program staff. This resource is available on the Web at http://www.acf.hhs.gov/programs/core/ongoing_research/faces/hs_pdf/albqfinl2.doc.

National Institute Of Child Health and Human Development (NICHD)

■ “Does Amount of Time Spent in Child Care Predict Socioemotional Adjustment During the Transition to Kindergarten?” (July/August 2003), in *Child Development* Vol. 74, No. 4, by NICHD Early Child Care Research Network, published by the Society for Research in Child Development (SRCD), looked at the relationship between time in nonmaternal care through the first 4 ½ years of life and children’s socioemotional adjustment. It examined data on social competence and problem behavior as reported by mothers, caregivers, and teachers of children in any of a variety of nonmaternal care arrangements who participated in the NICHD Study of Early Child Care. Additional information is available from SRCD on the Web at <http://www.srcd.org/cd.html>.

■ “Child-Care Structure → Process → Outcome: Direct and Indirect Effects of Child-Care Quality on Young Children’s Development” (May 2002), in *Psychological Science* Vol. 13, No. 3, finds that better caregiver training and lower staff-child ratios in child care settings lead to improvements in children’s cognitive skills and social competence. This report on the NICHD Study of Early Child Care provides a link from certain characteristics of child care that are regulated by States, such as caregiver training and child-staff ratios, to improved cognitive and social development in children. For a copy of the study, contact the American Psychological Society at 202-783-2077.

■ *The NICHD Child Care Study Results: What Do They Mean for Parents, Child Care Professionals, Employers and Decision Makers* (April 2002), published by the National Network for Child Care (NNCC), discusses the results from the current wave of the longitudinal NICHD Study of Early Child Care. The NICHD study follows more than 1,300 children at 10 different sites across the country. Information on more than 500 variables, including hours spent in various types of care, was collected to examine their impact on child outcomes. This article contains detailed information on the major findings and suggests implications of these results for parents, caregivers, employers and decision makers. This resource is available on the Web at <http://www.nncc.org/Research/NICHD.ECIresponse.html>.

■ “New Research Demonstrates Unique Effects of Quantity, Quality, and Type of Child Care Experienced from Birth Through Age 4.5” (Paper presented at the Meeting of the Society for Research in Child Development Tampa, Florida, April 2003), describes findings of the National Institute for Child Health and Human Development (NICHD) Study of Early Child Care. This information is available on the Web at <http://www.srcd.org/pp1.html>.

■ *The NICHD Study of Early Child Care* (January 1999) is a comprehensive longitudinal study initiated by NICHD, National Institutes of Health, U.S. Department of Health and Human Services in 1989 to answer the many questions about the relationship between child care experiences and characteristics and children's developmental outcomes. The study is characterized by a complex and detailed study design which takes into account many variables, including characteristics of the child care and the family environment. Researchers assessed children's development using multiple methods (trained observers, interviewers, questionnaires, and testing) and measured many facets of children's development (social, emotional, intellectual, and language development; behavioral problems and adjustment; and physical health). This report is available on the Web at <http://www.nichd.nih.gov/od/secc/index.htm>.

The Abecedarian Study

■ *A Benefit Cost Analysis of the Abecedarian Early Childhood Intervention* (2002), by Leonard N. Masse and W. Steven Barnett, published by the National Institute for Early Education Research (NIEER), is a benefit-cost analysis of the Abecedarian preschool program using data obtained from 104 participants through age 21 years. Program benefits were generated for six categories for which it was possible to obtain monetary estimates: (1) earnings and fringe benefits of participants, (2) earnings and fringe benefits of future generations, (3) maternal employment and earnings, (4) elementary and secondary education cost savings, (5) improved health, and (6) higher education costs and welfare use. Results indicate that the internal rate of return for the Abecedarian intervention appears to be slightly greater than 7 percent. The Abecedarian program results in healthy returns for the investment of public resources targeted at a disadvantaged group. The effects of program participation on the educational attainment, productivity, and earnings of at-risk children result in an improvement in overall social equity. Results also suggest a positive impact on smoking. This resource is available on the Web at <http://nieer.org/resources/research/AbecedarianStudy.pdf>.

■ *Early Learning, Later Success: The Abecedarian Study: Executive Summary* (October 2000), by the Frank Porter Graham Child Development Institute, University of North Carolina at Chapel Hill, summarizes a controlled study in which 57 infants from low-income families were randomly assigned to receive early intervention in a high-quality child care setting and 54 were in a non-treated control group. The participating children received full-time educational intervention in a high-quality child care setting from infancy through age 5. The investigators completed a young-adult follow-up assessment of study participants. At age 21, cognitive functioning, academic skills, educational attainment, employment, parenthood, and social adjustment were measured. The report concluded that the treatment group did better in all areas. The Executive Summary is available on the Web at http://www.fpg.unc.edu/%7Eabc/executive_summary.htm.

■ "Long-Term Consequences of Child Care," (Spring 2000), in *Early Development* Vol. 4, No. 1, published by Frank Porter Graham Child Development Institute, University of North Carolina at Chapel Hill, discusses the findings of a landmark study, the Abecedarian Project Follow-Up, in which gains from high-quality child care persist into adulthood. This resource is available on the Web at http://www.fpg.unc.edu/~NCEDL/PDFs/ed4_1.PDF.

High/Scope Perry Preschool Study

■ *Benefits, Costs, and Explanation of the High/Scope Perry Preschool Program* (Paper presented at the Meeting of the Society for Research in Child Development Tampa, Florida, April 2003), by Lawrence J. Schweinhart of the High/Scope Educational Research Foundation, reviews the High/Scope Perry Preschool Study and compares it with the Abecedarian Study and the Chicago Child-Parent Centers Study in order to examine the effects of a high-quality preschool program for children born in poverty. The study found evidence of preschool program effects on children's readiness for school and their subsequent educational success, economic success in early adulthood, and reduced number of criminal arrests throughout their lives. These benefits add up to a large return on public investment. This resource is available on the Web at <http://www.highscope.org/Research/PerryProject/Perry-SRCD-2003.pdf>.

■ *The High/Scope Perry Preschool Project* (October 2000), in *Juvenile Justice Bulletin*, by Greg Parks, published by Office of Juvenile Justice and Delinquency Prevention, Office of Justice Programs, U.S. Department of Justice, examines the High/Scope Perry Preschool program model, which demonstrates a potential link between early childhood intervention and delinquency prevention. The bulletin explains how and why the Perry Preschool Project was successful, presents two positive cost-benefit analyses, and examines the implications for future policy decisions. The authors conclude that an effective prevention strategy requires both quality programming and an adequate commitment of resources. This resource is available on the Web at <http://www.ncjrs.org/pdffiles1/ojjdp/181725.pdf>.

■ *Significant Benefits: The High/Scope Perry Preschool Study Through Age 27* (1993), by the High/Scope Educational Research Foundation, provides an account of a longitudinal study, (begun in the 1960s in Ypsilanti, Michigan), in which 123 young African American children (living in poverty and assessed as at-risk of school failure) were randomly assigned to a preschool program or no preschool program group. At ages 3 and 4, the preschool groups were exposed to a high-quality, active learning curriculum. Data were collected on both groups every year from ages 3 through 11, at ages 14–15, at age 19, and at age 27. Compared to the no program group, the program group obtained higher scores in general literacy at age 19, school achievement at age 14, intellectual performance (IQ) from the end of the first year of the preschool program to the end of first grade at age 7, and spent significantly fewer years in programs for educable mental impairment. This resource is available from the High/Scope Educational Research Foundation at 734-485-2000 or on the Web <http://www.highscope.org/productDetail.asp?intproductID=316>.

Chicago Child-Parent Center Program

■ *Age 21 Cost Benefit Analysis of the Title I Chicago Child-Parent Centers* (February 2002), by Arthur J. Reynolds, Judy A. Temple, Dylan L. Robertson, and Emily A. Mann, published by Institute for Research on Poverty (IRP), presents a cost-benefit analysis of a Federally financed, comprehensive early childhood program, the Title I Chicago Child-Parent Center Program (CPC). CPCs are located in public schools and provide educational and family support services to low-income children (aged 3–9 years). Data from 1,539 children in the

Chicago Longitudinal Study suggest that the measured and projected economic benefits of preschool participation, school-age participation, and extended program participation exceeded costs. Economic benefits to the general public, exclusive of individual earnings, also exceeded costs. By providing comprehensive and intensive services to children and families over several years, the CPC appears to reduce the likelihood of later scholastic and social difficulties and to enhance well-being. The observed links with educational attainment and crime prevention are especially significant given that school dropout and crime are general risk factors for several leading health indicators (e.g., tobacco use, substance abuse, mental illness, and injury and violence). Findings demonstrate the cost-effectiveness of public early childhood programs. This resource is available on the Web at <http://www.ssc.wisc.edu/irp/pubs/dp124502.pdf>.

■ “Long-Term Effects of Early Intervention on Educational Achievement and Juvenile Arrests: A Fifteen-Year Follow up of Low-Income Children in Public Schools” (May 9, 2001), in the *Journal of the American Medical Association* Vol. 285, No. 18, by Arthur J. Reynolds, Judy A. Temple, Dylan L. Robertson, and Emily A. Mann, discusses findings from the evaluation of the Chicago Child-Parent Center Program. It offers information on how large-scale, public early learning programs can promote children’s long-term success. The evaluation found that the longer the children were in the program and the younger they were when they entered, the higher the rates of high school completion and the lower the rates of juvenile arrest, school drop out, grade retention, and special education services respectively. A summary of this article is available on the Web at http://www.ccfca.gov/PDF/SRI/chicago_cpc_jama.pdf.

State-Specific Resources

Connecticut

■ *The School Readiness Initiative in South Central Connecticut: FY 2000 Update* (January 2001), by Walter S. Gilliam, published by the National Institute for Early Education Research (NIEER), reports on an evaluation of classroom-level quality in four cities in Connecticut (Meriden, Middletown, New Haven, and Waterbury) in an effort to implement the Connecticut School Readiness Initiative (CSRI). During 1999, baseline data were collected on the quality of all 123 CSRI classrooms. Findings from this baseline assessment were used to launch targeted quality improvement efforts in each of these classrooms. Follow-up data, collected on one-fourth of these programs, indicate great improvement. The percentage of classrooms rated inadequate fell from 9 percent to 0 percent; the number of classrooms rated excellent tripled (from 14 percent to 42 percent). Classrooms in programs accredited by the National Association for the Education of Young Children (NAEYC) significantly outscored their nonaccredited counterparts on virtually every measure of program quality assessed. There was a significant positive correlation between both the number of staff and the overall staff-child ratio and classroom quality. The area of greatest need for quality improvement was in the program aspects most consistent with CSRI’s legislated goal of promoting “school readiness” through a developmentally appropriate learning curriculum. Recommendations for increasing program quality include increased efforts to promote program accreditation and support of local quality enhancement projects. This resource is available on the Web at <http://nieer.org/resources/research/CSRI2000Update.pdf>.

Delaware

■ *Head Start ECAP Outcomes Report: State of Delaware, Fiscal Year 200 –2002* (2003), by Janet R. Cornwell and Patsy G. Kersteter, for the Delaware Early Childhood Center, Delaware Department of Education, presents information about the involvement of Federally-funded Head Start Programs for 3- and 4-year-olds and State-funded Early Childhood Assistance Programs (ECAP) for 4-year-olds in the Head Start/ECAP Outcomes Project. The project provides a systematic method for measuring child, family, and community outcomes for Head Start and ECAP programs in Delaware. The report illustrates what goals have been accomplished by families served by these programs and how these goals have been met. Results of the data collected from the Child Developmental Outcomes Forms for Head Start and ECAP programs indicate that children being served by these programs are progressing in all areas of development, including communication, cognitive, social-emotional, and physical development. Data indicate that families being served by these programs are completing a majority of the goals that were identified in their Family Partnership Agreements. This resource is available on the Web at

http://www.doe.state.de.us/early_childhood/research/State%20Report%20-Total%2001-02.pdf.

■ *Investing in Better Outcomes: The Delaware Early Childhood Longitudinal Study (DeCLS)* (April 2002), prepared by Michael Gamel-McCormick and Deborah Amsden, Center for Disabilities Studies, College of Human Services, Education, and Public Policy, University of Delaware, prepared for the Delaware Interagency Resource Management Committee and the Department of Education, Department of Health and Social Services, and the Department of Services to Children, Youth, and their Families, describes a longitudinal study that was designed to follow a group of children as they entered kindergarten in the fall of 1997. DeCLS was designed to follow the children from their kindergarten experience through their 3rd grade year, coinciding with their participation in the 3rd grade Delaware State Testing Program (DSTP). One of the primary questions of the study asked how did children with disabilities or living in poverty who received early intervention programming compare to children in similar situations who did not receive early intervention services? The study found participants were significantly more likely to meet or exceed the standard on their 3rd grade reading and math DSTPs, had significantly higher grades than their peers, and had a lower grade retention rate. This resource is available on the Web at http://www.doe.state.de.us/early_childhood/research/DECLS02.pdf.

Georgia

■ *Report of Findings From the Early Childhood Study: 2001-02* (August 2003), by Gary T. Henry, Laura W. Henderson, Bentley D. Ponder, Craig S. Gordon, Andrew J. Mashburn, and Dana K. Rickman, published by Georgia State University, Andrew Young School of Policy Studies, presents findings from a study that examined the development of 4-year-olds in early childhood programs, preschools, and child care centers in Georgia. Three groups of children attending preschool were included: (1) children enrolled in Georgia's Prekindergarten Program (Georgia Pre-K); (2) children attending Head Start as 4-year-olds (Head Start); and (3) children attending private preschools or child care centers (private preschool) who are eligible for the Georgia Pre-K Program. Overall, Georgia's 4-year-olds began preschool scoring below national norms on three of the four norm-referenced assessments of language development and cognitive skills. Children who attended preschool in Georgia made gains of a least four points against the national norms on all four standardized assessments from the time they entered preschool until

they entered kindergarten the following year. On average, children enrolled in Head Start were from homes and families with the greatest disadvantages; children enrolled in private preschools were from families with the fewest disadvantages; and children who attended Georgia Pre-K were from families with wide ranges in economic resources, parental education, involvement with children and schools, and family structures. The report concludes that higher levels of program quality benefited children from all three groups the report concludes. The efforts that Georgia's Pre-K Program expends in monitoring, technical assistance, and training support seem to be integral to achieving high-quality classrooms for 4-year-olds. This resource is available on the Web at <http://www.gsu.edu/~wwwsps/publications/2003/earlychildhood.pdf>.

Illinois

■ *Illinois Prekindergarten Program for Children at Risk of Academic Failure, FY 2000 Evaluation Report* (June 2001) provides information on how State grants are issued to public school districts to conduct preschool education programs for children ages 3 to 5 who are at risk of academic failure. Since 1987, the Illinois State Board of Education (ISBE) has been collecting data to follow the academic progress of the children who participated in the program. This resource is available on the Web at <http://www.isbe.net/research/pdfs/atrisk.pdf>.

Maryland

■ *An External Evaluation of the Judith P. Hoyer Early Care and Education Enhancement Program—Final Report* (January 2004), by MGT of America, submitted to the Maryland Department of Education, analyzed information about the implementation of the Judith P. Hoyer Early Care and Education Enhancement Program's first 13 centers and their accomplishments from 2001 to 2003. The report found that Judith P. Hoyer Early Child Care and Education Enhancement Centers (Judy Centers) help to close the achievement gap for low-income and other disadvantaged children. According to the report, children with limited English proficiency and children from low-income households were able to maintain literacy skills, scientific thinking, and appropriate behavior on par with the rest of their peers who were not at risk of school failure. The evaluation recommended that the progress of children from the centers continue to be followed through elementary school to determine the sustainability of the gains they have made. This resource is available on the Web at <https://secure.mgtamer.com/mdjudy/home/report.cfm?r=5>.

■ *Children Entering School Ready to Learn: School Readiness Information: School Year 2002-03 by State and County* (March 2003), by Maryland State Department of Education, presents descriptions of the state of school readiness in Maryland for the 2002-2003 school year. This was the second year that all kindergartners in the State of Maryland were rated on their readiness for school. Data show that 52 percent of entering kindergarten students in Maryland have been rated by their teachers as "fully ready" to do kindergarten work, 41 percent are at the "approaching readiness" level and need targeted support in order to meet kindergarten expectations, and 7 percent of the students are in the "developing readiness" category and need considerable support in order to do kindergarten work successfully. Compared to the school readiness data collected in 2001-2002, the composite school readiness data show that 3 percent more kindergarten students came to school fully ready. There was improvement in all domains; the largest improvement was in language and literacy. Regarding the relationship between school readiness and prior early care experience, the report noted that school readiness improved in four

of the six types of care. Improvement at the “full readiness” level ranged from 1 percent (Family Child Care) to 9 percent (Child Care Centers). This resource is available on the Web at http://www.msde.state.md.us/Special_ReportsandData/KReport2003/complete.pdf.

North Carolina

■ *Smart Start and Preschool Child Care Quality in NC [North Carolina]: Change Over Time and Relation to Children’s Readiness* (March 2003), by Donna Bryant, Kelly Maxwell, Karen Taylor, Michele Poe, Ellen Peisner-Feinberg, and Kathleen Bernier, for the Frank Porter Graham Child Development Institute, University of North Carolina at Chapel Hill, examined child care programs in North Carolina to determine what impact participation in Smart Start-funded activities had on preschool child care quality and children’s readiness for kindergarten. Language, literacy, numeracy, and social-emotional skills were assessed for 512 preschool children. Three main conclusions were drawn: between 1993 and 2002, child care quality increased significantly; participation in Smart Start-funded activities was positively related to child care quality; and children who attended higher-quality centers scored significantly higher on measures of skills and abilities deemed important for success in kindergarten than children from lower-quality centers. Classroom quality was positively related to children’s outcomes, over and above the effects of gender, income, and ethnicity. Children from poor and non-poor families were equally influenced by quality, providing support for quality improvement programs in all kinds of settings, serving all kinds of children, not just targeted to those who are poor. A summary of this report and additional information is available on the Web at http://www.fpg.unc.edu/smartstart/reports/Child_Care_Quality_2003.pdf.

Pennsylvania

■ *Early Care and Education: The Keystone of Pennsylvania’s Future: Preparing Our Children for Success* (November 2002), prepared by Richard Fiene, Mark Greenberg, Martha Bergsten, Christopher Fegley, Barbara Carl, and Elizabeth Gibbons, Prevention Research Center, The University of Pennsylvania State University and the Universities Children’s Policy Collaborative (UCPC), prepared for the Governor’s Task Force on Early Childhood Care and Education, describes an early childhood quality settings’ study completed on 372 early care and education facilities in Pennsylvania. It is one of five studies completed by UCPC for the Governor’s Task Force on Early Childhood Care and Education. These studies provide a baseline to the early care and education services delivered in Pennsylvania. The study measures the environmental and interactional quality of 50 Head Start programs, 48 preschools, 111 child care centers, 109 family child care homes, 46 group child care homes, and 8 legally unregulated/relative/neighbor care homes. The results indicate that Head Start and preschools provide a higher level of quality, and that the educational level of providers and utilizing a curriculum is related to quality, especially for family child care home providers. This resource is available on Web at http://caecti.org/docs/publication/quality_study_final.pdf.

■ *A Baseline Report of Early Care and Education in Pennsylvania: The 2002 Early Care and Education Provider Survey: Full Report* (September 2002), by Wendy A. Etheridge, Robert B. McCall, Christina J. Groark, Kelly E. Mehaffie, and Robert Nelkin, published by University of Pittsburgh Office of Child Development and Universities Children’s Policy Collaborative (UCPC), presents findings from the 2002 Early Care and Education Provider Survey, designed to collect information from 637 child care centers, Head Start centers, preschools and nursery

schools, group home child care providers, family home child care providers, and legally unregulated home providers regarding child care and early education in Pennsylvania. Head Start sites had the highest overall structural quality rating, and no Head Start site was rated as low quality. Head Start staff were the most highly educated and engaged in the most ongoing professional development training. Most center-based early care and education programs were nonprofit entities, and nonprofit programs tended to have lower fees for families, yet offered higher quality and were more often accredited. Rural counties lacked access to center-based programs and accredited facilities. High-income families appeared to choose higher-quality center programs but lower-quality homes. Center-based programs provided more planned curricular experiences and programs for preschoolers that related to improved school readiness than did home-based programs. When sites had higher fees, they reported less difficulty meeting operating expenses. Salaries were fairly low for all early care and education staff, and benefits were few, particularly in homes. Staff turnover in early care and education programs varied with quality and the income of the families served. This resource is available on the Web at <http://www.prevention.psu.edu/ece/docs/FullReport1.pdf>.

South Carolina

■ *First Steps and Further Steps: Early Outcomes and Lessons Learned from South Carolina's School Readiness Initiative, 1999–2002 Program Evaluation Report: Full Report* (2003), by South Carolina First Steps, presents the 1999-2002 evaluation of South Carolina's First Steps to School Readiness, a comprehensive early childhood initiative aimed at improving early childhood development by providing services to children (birth to age 5) and support to their families in an effort to help children reach school ready to learn. This resource is available on the Web at <http://www.scfirststeps.org/docs/CTfullreport.pdf>.

Wisconsin

■ *Focus on Economic Development: Early Childhood Education and Care: Challenges Facing Wisconsin: A Working Paper* (October 27–28, 2003) developed by the Wisconsin Department of Public Instruction; the Wisconsin Department of Workforce Development; and the Waisman Center, University of Wisconsin-Madison, was prepared for the Fourth Wisconsin Economic Summit. The paper provides Wisconsin State leaders with a new context for viewing the economic challenges facing Wisconsin. The paper seeks to stimulate thoughtful reflection and substantive discussion on the relationship between the quality of Wisconsin's early childhood programming and the future growth of the State's economy. It advances the argument that any efforts toward building the State's future economic capacity must start with providing high-quality early childhood education and care for the youngest residents. This resource is available on the Web at <http://www.wisconsin.edu/summit/papers/earlyChildhood.pdf>.

Arkansas, Louisiana, Mississippi, and Texas

■ *The Economics of Education: Public Benefits of High-Quality Preschool Education for Low-Income Children* (2003), by Jerrold Oppenheim and Theo MacGregor, developed for Entergy by Building Communities for Change, articulates and analyzes the economic benefits of providing a high-quality preschool education to all low-income 3- and 4-year-olds in the United States, and especially in the Entergy States of Arkansas, Louisiana, Mississippi, and Texas. The report notes that the benefits of high-quality preschool include increased high school graduation rates; less need for welfare assistance; fewer claims for unemployment benefits; higher income

tax payments; less burden on the criminal justice system; fewer children needing the costs of an added year in school; and fewer children needing costly special education services. This resource is available on the Web at http://www.arkansas.gov/childcare/education_book.pdf.

Florida, Georgia, Maryland, South Carolina, and Texas

■ *Improving Children's Readiness for School: Preschool Programs Make a Difference, But Quality Counts!* (2001), by David R. Denton, published by the Southern Regional Education Board (SREB), discusses five SREB States (Florida, Georgia, Maryland, South Carolina, and Texas) that have evaluated their prekindergarten programs and that provide evidence of their effectiveness. The report proposes that, for the children who participated in a program compared with those who did not, high-quality preschool improves readiness for school as evidenced by higher average scores on 1st grade achievement tests in reading and mathematics and reduced rates of grade repetition and referral to special education services. This resource is available on the Web at <http://www.sreb.org/programs/srr/pubs/Readiness.pdf>.

Multi-States

■ *State-Funded Pre-Kindergarten: What the Evidence Shows* (December 2003), by the Office of the Assistant Secretary for Planning and Evaluation, U.S. Department of Health and Human Services, shows that selected States are major providers and funders of prekindergarten programs. Though there is great variation across States, State-funded prekindergarten programs tend to meet widely accepted and research-based quality standards, offer key expanded services to meet children's health and nutrition needs, and use a range of strategies to involve parents in their children's education. Existing research on the results of State-funded prekindergarten programs has technical limitations that constrain what can be known about the impact of State efforts on children's outcomes. The report concludes that not all States currently have the capacity to undertake the administration of a coordinated and comprehensive early childhood education system that includes a strong evaluation component to measure results. However, the overall pattern of findings indicates that selected States appear ready to meet this challenge. This resource is available on the Web at <http://aspe.hhs.gov/hsp/state-funded-pre-k/index.htm>.

■ “A Critical Meta-analysis of All Evaluations of State-Funded Preschool from 1977 to 1998: Implications for Policy, Service Delivery and Program Evaluation” (October 2000), in *Early Childhood Research Quarterly* Vol. 15, No. 4, by Walter S. Gilliam and Edward F. Zigler, looks at the evaluations of the 13 State preschool programs that have completed a formal evaluation of the program’s impact on child outcomes. The reports notes modest support for positive impacts in improving children’s developmental competence in a variety of domains, improving later school attendance and performance, and reducing subsequent grade retention. For additional information, contact Walter S. Gilliam, Associate Research Scientist, Child Study Center, at walter.gilliam@yale.edu.

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